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ABSTRACT

This user manual introduces and explains the Basic Math Mastery Tests (BMMT), a collection of 10 tests of specific mathematics skills. The tests were designed to assess mastery of specific skills required for successful performance in vocational education or in occupations requiring mathematics skills. All 10 tests are administered and scored by computer. The 10 tests are: (1) addition; (2) subtraction; (3) multiplication; (4) number operations and counting; (5) division; (6) geometry; (7) algebra; (8) fractions; (9) decimals; and (10) number conversions. Directions for administering the tests, scoring them, and producing score reports are included, with illustrations of software menus and screens presented in 18 figures. Appendixes discuss files created and used by the system. (SLD)

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USER'S MANUAL FOR THE BASIC MATH MASTERY TESTS

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Chapter 1
INTRODUCTION AND INSTALLATION

The Basic Math Mastery Tests (BMMT) system is a collection of ten tests of specific basic math skills. The tests were designed to assess mastery of specific skills required for successful performance in vocational education as well as in occupations requiring math skills. All ten tests are administered and scored by computer. The ten tests that comprise the BMMT are the following:

1. *Addition* – Assesses competency in adding one whole number to another.

2. *Subtraction* – Assesses competency in subtracting one whole number from another.

3. *Multiplication* – Assesses competency in multiplying one whole number by another.

4. *Number Operations and Counting* – Assesses competency in basic number operations, including counting, ordering, interpretation of operators (>, =, and <), odd-even, place value, and rounding to nearest ten, hundred, or thousand.

5. *Division* – Assesses competency in dividing one whole number by another, with and without remainders.

6. *Geometry* – Assesses both recognition of basic properties of angles, triangles, parallel lines, circles, and other geometric figures and estimation of area and perimeters.

7. *Algebra* – Assesses basic skills in finding the value of a single unknown in a simple equation.

8. *Fractions* – Assesses competency in addition, subtraction, multiplication, and division of fractions and mixed numbers, including reduction and least common denominators.

9. *Decimals* – Assesses competency in addition, subtraction, multiplication, and division of decimal numbers.

10. *Number Conversions* – Assesses competency in performing the following number conversions (and their reversals): fractions to decimals, fractions to percents, fractions to mixed numbers, decimals to mixed numbers, and percents to decimals.

These tests are listed in increasing order of average difficulty, based on data from a sample of students in vocational-technical schools. Thus, *Addition* contains the easiest questions on average and *Number Conversions* contains the questions with the highest average difficulty. For further details, see Weiss, Cassuto, and Trombley (1992).

The BMMT system is designed so that any combination of tests (a test battery) can be defined in advance and administered to a student. The entire system is menu driven. This manual describes how to use the software to develop test batteries; administer those test batteries; and display, print, or save the student test reports. Information on the development of the tests is provided by Weiss et al. (1992); Pucel, Davis-Feickert, and Lewis (1992) describe a procedure for assessing the math requirements of specific occupations that can be used in conjunction with the BMMT to evaluate individual math competencies for occupations.

The tests in the BMMT are adaptive tests using a random sequential testing algorithm. Consequently, each student will generally receive a different sequence of test questions. Further, the number of test questions can vary from student to student on a given test, as a result of the termination criterion used. The number of questions for a given student may also vary from test to test. The termination criterion is based on the sequential probability ratio test, with a mastery criterion of ninety percent correct and mastery classification error rates of .05 or less. Thus, the procedure will erroneously classify a true "Master" as a "Nonmaster" less than five percent of the time. Conversely, a true "Nonmaster" will be erroneously classified as a "Master" less than five percent of the time.

Most such classifications will require only a few test questions, but each test has a minimum length of ten questions; therefore, most actual error rates will be substantially less than five percent. Most students can expect to be classified as a "Master" or "Nonmaster" in ten questions per test. Note that classifications of "Master" can occur for a student with less than ninety percent correct because the classification is based on a probability ratio and

not just on the observed proportion correct. For details of the test construction process and the adaptive algorithm used, see Weiss et al. (1992).

The BMMT testing system includes all instructions necessary for a student to complete the tests. No typing skills are required. All test questions are multiple choice. The student selects her/his answer by pressing only the SPACE BAR on the computer keyboard. When the student has chosen her/his answer, she/he presses the ENTER/ RETURN key to go to the next question. Because these are tests of math calculations, the student should have paper and pencil available to use during the test. The examiner should collect these papers after each student has completed the tests.

A test report is available to the examiner as soon as the tests are completed, either on the screen or in printed form. Test reports can also be saved for later display or printing.

System Requirements

Computer Hardware

1. An IBM or IBM-compatible microcomputer

2. 512Kb RAM

3. A CGA color graphics adapter or above (i.e., EGA, VGA, or SVGA)

4. A hard disk with a minimum of 2.1Mb of free space on the C: drive

Software

1. DOS version 3.3 or higher.

2. The line `DEVICE=ANSI.SYS` must be specified in the `CONFIG.SYS` file. This file is usually located in the root directory (`C:\CONFIG.SYS`). If this line does not currently exist in the `CONFIG.SYS` file, it must be added before the BMMT will execute properly. To change the `CONFIG.SYS` file, go to the root directory (type `CD \`) and edit the file using your text editor. In addition, the system file `ANSI.SYS` must exist in a directory that is in the `PATH` statement (the `ANSI.SYS`

file is also usually located in the root directory; to determine if this file is in the root directory, go to that directory and type `DIR ANSI.SYS` and see if the file and its date of creation are listed on the screen). If you are in any doubt about these requirements or procedures, consult someone who has experience with DOS.

Installation

The BMMT is provided in two configurations, as condensed files:

1. Two 360Kb double-sided double-density (2S/2D) 5¼" diskettes

2. One 720Kb double-sided double-density (MF2-DD) 3½" diskette

Because the files are condensed, the BMMT must be installed as follows:

1. Insert the Number 1 diskette in the appropriate diskette drive (usually the A: drive);

2. Change the default drive to the diskette drive by typing `A:` (or another letter designating the diskette drive) and pressing ENTER (on some keyboards this key is labeled RETURN);

3. At the prompt `A:\`, type `INSTALL`. The installation program will create a directory `C:\BM` and a subdirectory `C:\BM\OP` which will contain all the programs, tests, and data files. If the version of the program you are installing was provided on more than one diskette, follow the instructions on the screen to complete the installation.

The program must be installed on the hard drive (C:). Do not attempt to change the directory and/or subdirectory name or move any files from the created directories, except as described in the Appendix.

Chapter 2
GETTING STARTED

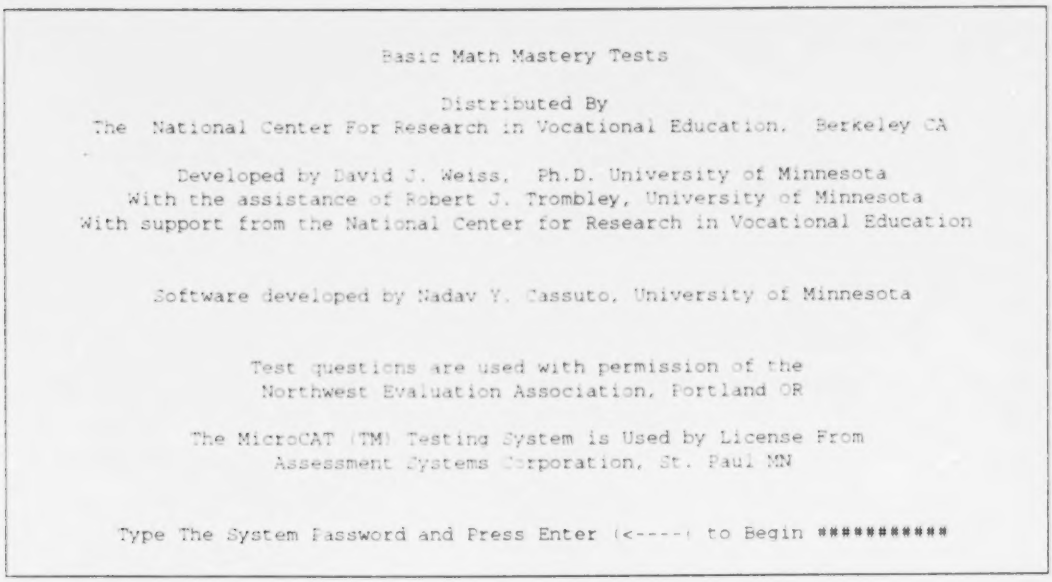
In this manual, all commands to be typed, file names, and other text displayed on your computer monitor are shown in CAPITAL (uppercase) letters in a typeface which is different from the rest of the text. The commands can also be entered in lowercase letters or any combination of upper- and lowercase letters. All commands must be followed by pressing the ENTER/RETURN key.

When selecting a numbered option from a BMMT menu, it is necessary only to type the number; it is not necessary to press the ENTER/RETURN key following the number. If you make a typing mistake while entering information into the computer, move the cursor back to the point of the mistake using the BACKSPACE key (often labeled ←) and retype the information.

Starting the BMMT

Change to the BMMT directory by typing `CD \BM\OP` then pressing ENTER. At the `C:\BM\OP` prompt, type `TESTMENU` and press ENTER. The introductory screen shown in Figure 1 will appear.

Figure 1
The Introductory Screen


Basic Math Mastery Tests
Distributed By
The National Center For Research in Vocational Education, Berkeley CA
Developed by David J. Weiss, Ph.D. University of Minnesota
With the assistance of Robert J. Trombley, University of Minnesota
With support from the National Center for Research in Vocational Education
Software developed by Nadav Y. Cassuto, University of Minnesota
Test questions are used with permission of the
Northwest Evaluation Association, Portland OR
The MicroCAT (TM) Testing System is Used by License From
Assessment Systems Corporation, St. Paul MN
Type The System Password and Press Enter (<----) to Begin **********

Entering the System Password

The BMMT system is password protected to provide protection of your test batteries and student report files. At the bottom of the introductory screen you will be asked for a system password (which cannot be changed). Your password will not be displayed as you type it. Type the password MASTERY CAT (including the space between the words). If you do not type the correct password, you will have an opportunity to enter it again. You can exit the BMMT by pressing ENTER without any other entry.

The Main Menu

After entering the correct password, the Main Menu shown in Figure 2 will appear on the screen. The Main Menu provides you with access to all the options of the BMMT. These options are discussed in detail later.

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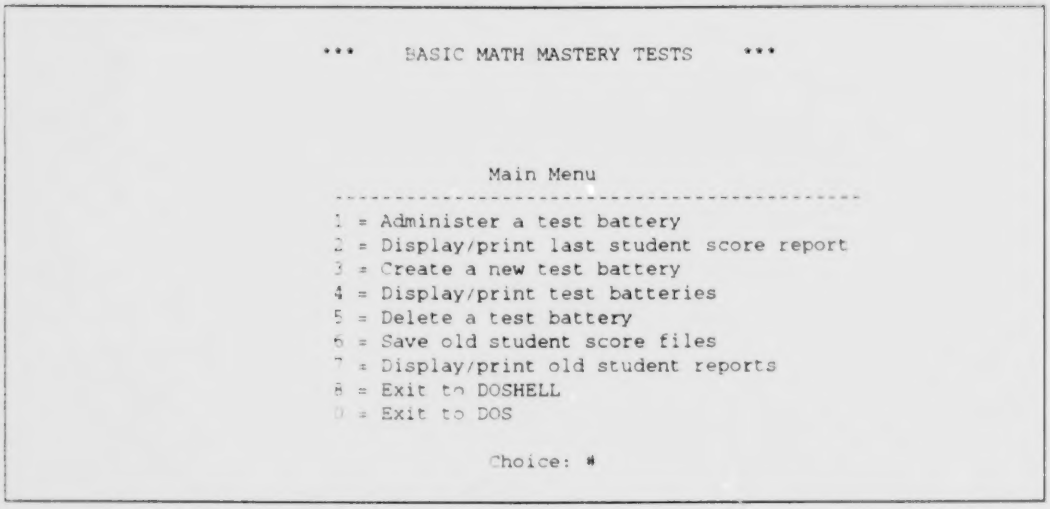
Figure 2
The Main Menu


*** BASIC MATH MASTERY TESTS ***
Main Menu
1 = Administer a test battery
2 = Display/print last student score report
3 = Create a new test battery
4 = Display/print test batteries
5 = Delete a test battery
6 = Save old student score files
7 = Display/print old student reports
8 = Exit to DOSHELL
0 = Exit to DOS
Choice: #

Options 1 and 2 of the Main Menu are those that you will use to administer tests and to immediately obtain test reports. Before you can administer tests, however, you must create test batteries using option 3; option 3 is discussed in detail in Chapter 3. Option 1, administering tests, is discussed in Chapter 4. Option 2 and the related options 6 and 7 assist you in displaying, printing, and managing student score reports; these options are discussed in Chapter 5. Chapter 6 discusses options 4 and 5, which allow you to manage your test batteries. Option 8 allows you to temporarily exit to DOS to run other programs, and option 0 terminates the BMMT and returns you to DOS (these options are not discussed further). In using the BMMT submenus, option 0 always returns you to the previous menu.

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Chapter 3
CREATING TEST BATTERIES

Before you can administer any tests, you must create one or more test batteries. A test battery is a combination of one or more of the ten tests that you want to administer in a particular order. For example, Test Battery 1 might consist of the *Addition*, *Subtraction*, and *Multiplication* tests in that order. Test Battery 2 might administer the *Division*, *Fractions*, *Decimals*, and *Algebra* tests in that order. You can create as many different test batteries as you wish. A test battery can consist of a single test or up to all ten tests in a particular order. The number of test batteries is limited only by the space available on your hard disk. The largest test battery will occupy 783 bytes; the smallest will occupy 185 bytes.

You create test batteries by selecting option 3 from the Main Menu. The screen shown in Figure 3 will appear.

Figure 3
The First Menu in the Test Battery Creation Sequence

```
                    TEST BATTERY CREATION

Type a name for this test battery (8 characters or less), then press Enter:

******** Or press Enter (<------) to exit.
```

Test batteries are stored on your disk as DOS files; therefore, each test battery must have a name of eight characters or less (all DOS file names can include both letters and numbers). To begin to create a test battery, type a battery name in response to the screen shown in Figure 3, and press ENTER. You should not use blank spaces in file names that you supply in the BMMT system; if you do, the blank spaces will be replaced by an underline (_) character. If you type more than eight characters, your file name will consist of the first eight characters that you typed.

If a test battery with the name you entered already exists, a message will appear asking whether you want to replace the already existing battery or choose a different name.

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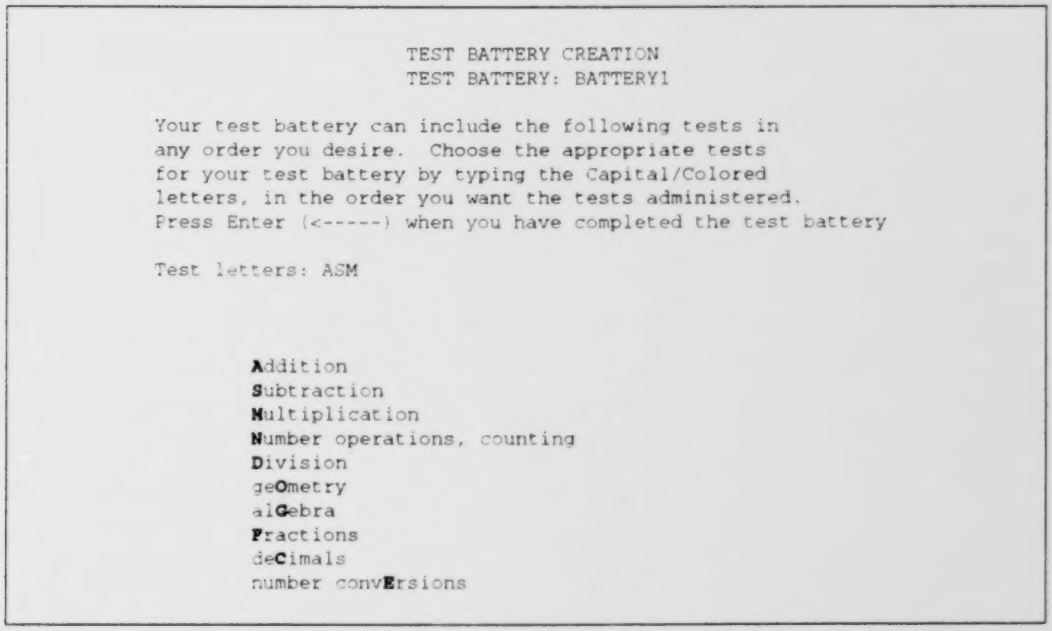
If you choose to replace a previously existing battery of that name, the previous battery will be erased and the new battery will take its place. If you press ENTER without entering a battery name you will be returned to the Main Menu.

After you provide a name for your new test battery, the screen shown in Figure 4 will appear. This screen allows you to select the tests to be administered in the battery and to order them in a specified sequence. Tests are selected by typing the red *capital* letter in each of the ten test descriptions in the order that you want the tests administered. When you have completed the test selection process, press ENTER. For example, to create a test battery that includes tests of addition, subtraction, and multiplication, type ASM, then ENTER. To create a second test battery that includes tests of division, fractions, decimals, and algebra, type DFCG then press ENTER.

Figure 4
The Test Battery Test Selection Screen



The program will not allow you to repeat the same letter twice nor will it allow you to enter letters that do not exist as capital letters in the list in Figure 4. If you enter duplicate or invalid letters, you will be asked to replace the incorrect or duplicate letters or to discard them by pressing ENTER. If you want to terminate the test creation process without

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creating a test battery, press ENTER without typing any letters and you will be returned to the Main Menu.

After you have specified the tests that you want in your test battery, the test battery verification screen shown in Figure 5 will appear. This screen gives you the opportunity to make sure that you have properly created the test battery before it is saved to disk.

If you answer N (for no), the test battery will not be created and you will be returned to the screen in Figure 3. If you type Y (for yes) the screen in Figure 5 will be updated as shown in Figure 6.

Figure 5
The Test Battery Verification Screen

```
                    TEST BATTERY CREATION

The test battery "BATTERY1" consists of the following tests
which will be administered in the following order:


          Addition
          Subtraction
          Multiplication

Is this Battery OK (Y/N) ? #
```

The screen in Figure 6 requests you to enter a description for your test battery. The battery description will be helpful to you later in recognizing the contents and purposes of your test batteries. This description will appear in the student report files and will be displayed on the screen or on your printer when you want to list the test batteries that you have created or want to print or display the contents of a specific test battery.

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Figure 6

The Updated Test Battery Verification Screen

```
                        TEST BATTERY CREATION

The test battery "BATTERY1" consists of the following tests
which will be administered in the following order:


            Addition
            Subtraction
            Multiplication

Please type in the space below a brief description
of the test battery (maximum 51 characters).
**************************************************

Press Enter (<----) when finished.
```

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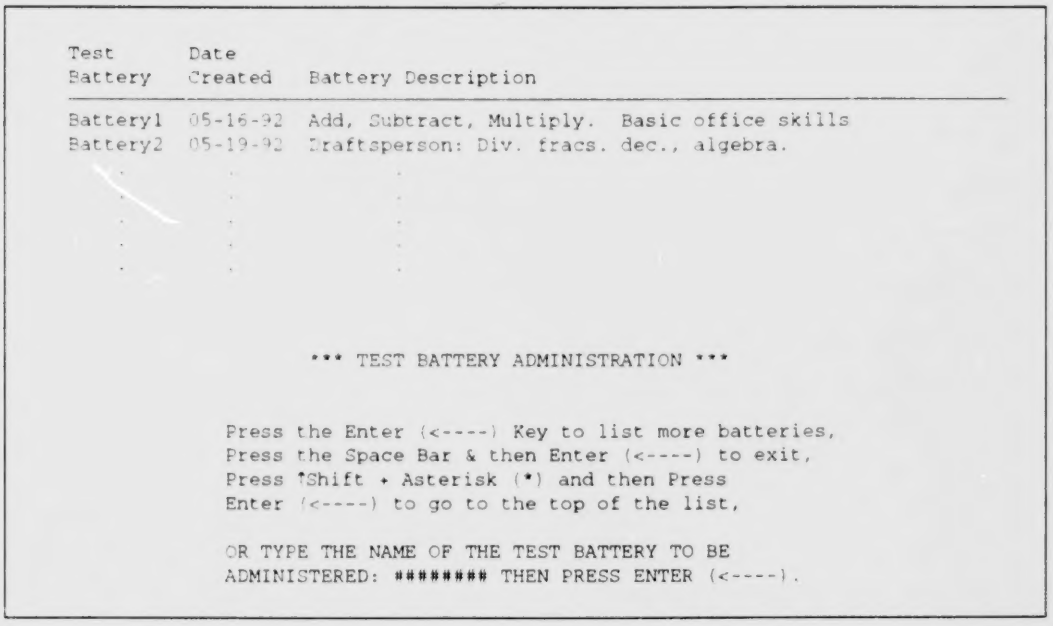
Chapter 4
ADMINISTERING TESTS

To administer a test battery to a student, select option 1 from the Main Menu. A screen like that shown in Figure 7 will appear.

Figure 7
The Test Battery Selection Screen


Test Battery
Date Created
Battery Description
Battery1 05-16-92 Add, Subtract, Multiply. Basic office skills
Battery2 05-19-92 Draftsperson: Div. fracs. dec., algebra.
*** TEST BATTERY ADMINISTRATION ***
Press the Enter (<----) Key to list more batteries,
Press the Space Bar & then Enter (<----) to exit,
Press Shift + Asterisk (*) and then Press
Enter (<----) to go to the top of the list,
OR TYPE THE NAME OF THE TEST BATTERY TO BE
ADMINISTERED: ######## THEN PRESS ENTER (<----).

This screen will list the test batteries that are available for you to administer. For each test battery, the name of the battery, the date it was created, and the battery description that was entered when the battery was created will be displayed, one line per battery. Batteries will be listed in alphabetical order by test battery name.

If there are more batteries than can be listed on a single screen, the box at the bottom of the screen will provide instructions for continuing the listing. When the last batteries have been displayed, the box at the bottom of the screen will so indicate. In both cases, the box provides appropriate instructions on how to proceed:

- *To continue through the list of available tests,* just press ENTER.

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- *To exit without administering a test battery,* at any point in the listing, press the SPACE BAR once and then press ENTER. You will then return to the Main Menu.

- *To go to the top of the list of test batteries,* press the SHIFT key plus the * key (so that an * appears in the response box) then press ENTER. The listing of the available batteries will then start again from the beginning.

- *To select a battery to be administered to a student,* type the battery name and press ENTER. The selected battery will then be administered to the student.

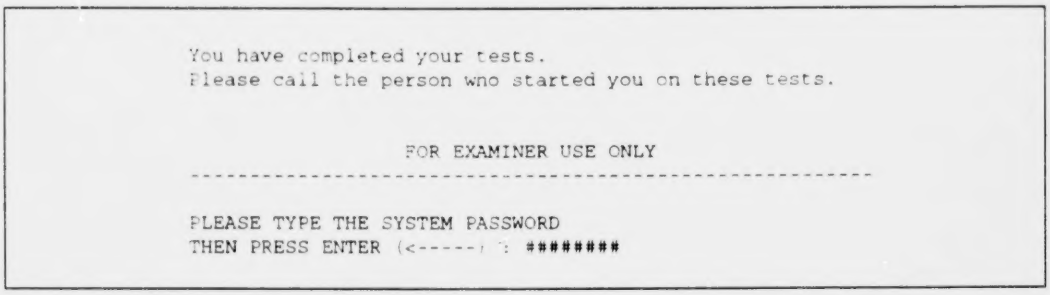
After a brief delay, a sequence of instructional screens will be displayed. These screens contain instructions to the student on how to use the SPACE BAR and the ENTER keys. *These are the only keys that the student will need to use to answer the test questions.*

No intervention is required from the examiner unless the student has difficulties; therefore, the examiner should be available in case help is needed. The instructional sequence will ask the student to call the examiner if he or she is having problems such as locating the SPACE BAR or the ENTER key. Test administration automatically begins when the student has successfully completed the instructions. Each test begins with a screen telling the student the content of the test (e.g., `This is a test of addition.`) and ends with a screen telling the student that the test is completed. Testing continues until all tests in the battery have been completed.

At the end of the test battery the student will be instructed to call the examiner (i.e., the person who started her/him on the tests). The message shown in Figure 8 will appear on the screen:

Figure 8

The End of Test Battery Screen


You have completed your tests.
Please call the person who started you on these tests.
FOR EXAMINER USE ONLY
PLEASE TYPE THE SYSTEM PASSWORD
THEN PRESS ENTER (<-----) : ********

At this point, you will have to type the system password, which is the same password used on the introductory screen (MASTERY CAT). The password is used to prevent the student from either seeing her or his report without the examiner being present or gaining access to other aspects of the system. Chapter 5 explains how to display, print, and save student reports.

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Chapter 5
DISPLAYING, PRINTING, AND SAVING STUDENT REPORTS

Displaying or Printing the Report of the Student Just Tested

Once the password has been entered correctly (this may be done after the student has left the area if you so desire) the screen shown in Figure 9 will appear.

Figure 9
The Student Report Menu

```
The assigned test battery has been completed.
Please refer to the following menu for the next step:


                    Last Student Report Menu
------------------------------------------------------------
1 = Display report on screen
2 = Save last student report to a file
3 = Print report on a parallel printer (LPT1)
4 = Print report on a serial printer (COM1)
0 = Exit and return to the main menu

    If you do not save this student report to a file now
    or from the main menu, these scores will be lost when
    any test battery is administered to the next student.

                    Choice: #
```

Select 1 if you want to display the results of the test on the screen.

Select 3 or 4 to print the last student's report. You will have to refer to the hardware manual for your computer if you do not know whether your printer is attached to a serial (COM1) port or to a parallel (LPT1 or PRN) port. If you are not sure to which port your printer is connected, be sure that your printer is turned on and on-line and try both options 3 and 4 to see which works. If neither works (e.g., if your printer is LPT2), you will need to save the report to a file then print the file from DOS.

When you select options 3 or 4 you will be asked for student identification information. This information will be printed on the report to identify the student along with the test battery name and description and the date the test battery was administered.

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The student identification field can include student name, identification number, or whatever information you wish to use to identify the student.

Figure 10 shows a sample student report. As Figure 10 shows, in addition to student identification information and information on the test battery, the report shows the mastery cutoff value of ninety percent that is used to determine mastery separately for each test. Then, each test is listed in order of administration. For each test, the following is shown: the number of test questions administered, the number correct, the percent correct, and a designation of mastery status on each test. MASTER is printed if the probability ratio test indicates that the student can be classified as a "Master" and NON-MASTER is printed if the probability ratio test has designated the student as a "Nonmaster" (see Chapter 1 for a detailed explanation of these classifications).

Figure 10
A Sample Student Test Report

BASIC MATH MASTERY TESTS
STUDENT REPORT

Student Identification: 007 John Doe
Test Date: MONDAY, 08-10-1992
Test Battery Name: Bookkeep
Test Battery Description:
Basic skills needed for simple bookkeeping
The Percent Correct for Mastery is 90%

Test	Number of Items	Number Correct	Percent Correct	Master?
Subtraction	14	12	86%	MASTER
Division	10	4	40%	NON-MASTER

Saving the Report of the Student Just Tested

Select option 2 from the Student Report Menu to save the last student report to a file. Note that once you choose option 2, options 1, 3, and 4 will no longer be available to you from this menu. You can implement these actions by using options 6 and 7 from the Main Menu as discussed later.

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Note the warning at the bottom of the screen in Figure 9. A test report for a student is permanently saved as a file *only if you activate the Save File option* (option 2). If you do not explicitly save a student's report file, all the student's data will be lost when any test battery is administered to the next student. However, unless you want to maintain a permanent electronic record of each student's performance, there may be no need to save a student report file once you have printed it. If you save a large number of student files, they may begin to take up a substantial amount of space on your hard disk. See the Appendix for instructions on clearing your disk of old student report files.

To save the report of the student just tested, select option 2 from the Student Test Report Menu. You will be asked to supply a name for the report file (eight characters maximum) and student identification, which will be written into the file along with the student report data. Student identification data can include student name, identification number, or other information; it can be up to fifty-three characters in length. The student identification information will be displayed along with the file name and date of testing when you list old student files (see below).

Saving, Displaying, and Printing Score Reports of a Student Previously Tested

You can also print student reports from the Main Menu (Figure 2). Options 6 and 7 on the Main Menu allow you to save student score files and to print saved student reports. An "old student score file" is the report of the last student tested; an "old student report" is an "old student score file" that has been previously saved. Once a student report has been saved (even if the student has just completed the test battery), it is an "old student score file." If you want to work only with the test battery of the last student, choose 2 from the Main Menu. Option 7 from the Main Menu allows you to work with all the previous students' files.

Select option 6 on the Main Menu to save a student report file that has not previously been saved. If you try to save an "old student score file" that has already been saved, you will get an error message telling you that it is not possible to do so.

If there is a file that can be saved, you will be asked for a file name (eight characters or less) for the student report file and for student identification. The identification can be any string of no more than fifty-three characters. The student identification information will be displayed along with the file name and date of testing when you list old student files (see below).

Selecting option 7 on the Main Menu will result in the menu shown in Figure 11.

Figure 11
Student Report Menu

```
                    Test Report Display Menu
-------------------------------------------------------------
1 = Display old student test reports on the screen
2 = Print old student test reports on a parallel printer (LPT1)
3 = Print old student test reports on a serial printer (COM1)
0 = Return to main menu

                    Choice: *
```

Select 1 to display reports on the screen; select 2 or 3 to print reports on the appropriate printer (see the discussion on printing earlier in this chapter if you do not know whether your printer is configured as LPT1 or COM1). Selection of any of these options will result in a screen like that shown in Figure 12.

In this student report display, "Test Report" is the name of the file in which a student's report is saved; "Date Created" is the date the scores were saved; "Test Battery" is the name of the test battery administered to the student; and "Student I.D." is the student identification information entered when the report was saved. Files are listed in alphabetical order of file name.

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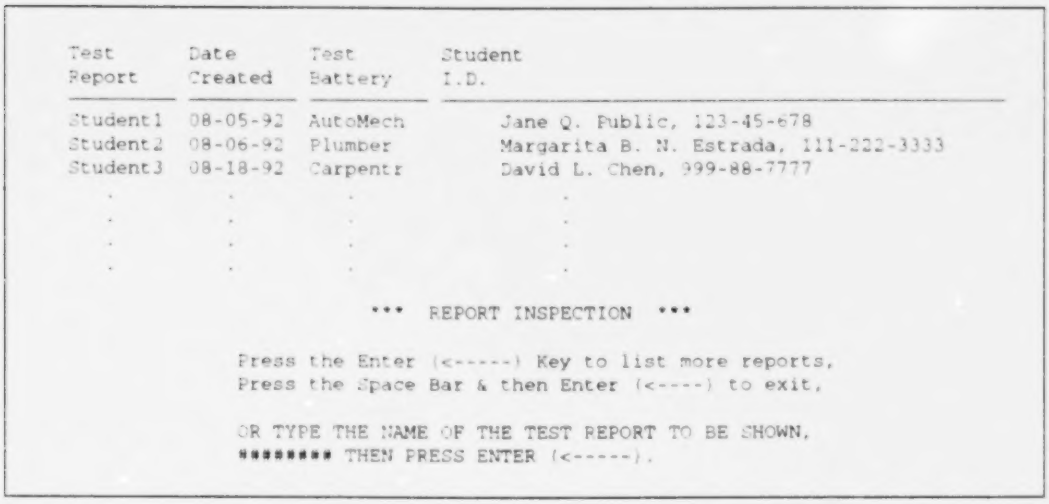
Figure 12

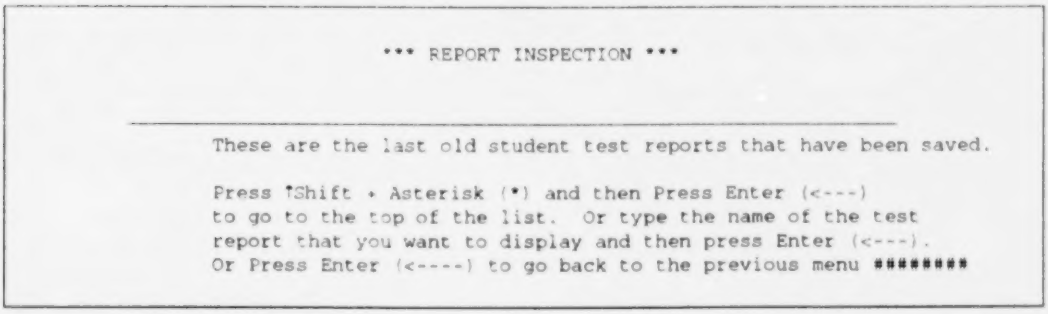
A Sample Listing of Old Student Report Files


Test Report
Date Created
Test Battery
Student I.D.
Student1 08-05-92 AutoMech Jane Q. Public, 123-45-678
Student2 08-06-92 Plumber Margarita B. N. Estrada, 111-222-3333
Student3 08-18-92 Carpentr David L. Chen, 999-88-7777
*** REPORT INSPECTION ***
Press the Enter (<-----) Key to list more reports,
Press the Space Bar & then Enter (<----) to exit,
OR TYPE THE NAME OF THE TEST REPORT TO BE SHOWN,
######## THEN PRESS ENTER (<-----).

The box at the bottom of the screen in Figure 12 provides further instructions. When the end of the list of student report files is displayed, the box at the bottom of the screen will change color to red and will display the message shown in Figure 13.

Figure 13

Message Displayed at the End of Student Report List


*** REPORT INSPECTION ***
These are the last old student test reports that have been saved.
Press Shift + Asterisk (*) and then Press Enter (<---)
to go to the top of the list. Or type the name of the test
report that you want to display and then press Enter (<---).
Or Press Enter (<----) to go back to the previous menu ########

A student report file name can be entered at any time during the listing and will be displayed or printed based on the option chosen previously.

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Chapter 6
MANAGING YOUR TEST BATTERIES

Displaying and Printing Test Batteries

Option 4 on the Main Menu allows you to display or print either a list of available test batteries or the contents of a specific test battery. Selection of option 4 from the Main Menu results in display of the menu shown in Figure 14.

Figure 14
The Test Battery Display and Printing Menu

```
                    Test Battery Display Menu
-----------------------------------------------------------------
1 = Display all available test batteries on the screen
2 = Print all available test batteries on a parallel printer (LPT1)
3 = Print all available test batteries on a serial printer (COM1)
4 = Display the contents of a test battery to the screen
5 = Print the contents of a test battery on a parallel printer (LPT1)
6 = Print the contents of a test battery on a serial printer (COM1)
0 = Return to the main menu

                    Choice: *
```

Selection of option 1 from the Test Battery Display menu will result in a screen like that shown in Figure 15. This screen lists test batteries in alphabetical order of file name. For each battery, the battery name, date created, and battery description are listed, one line per battery. If there are more batteries than will fit on the screen, a box at the bottom of the listing provides information for continuing, restarting, or ending the listing.

Selection of options 2 or 3 from this menu will print the listing of available tests batteries to the appropriate printer. If you do not know whether your printer is configured as LPT1 or COM1, be sure that your printer is turned on and is on-line and try both options 2 and 3.

If your printer is not configured as LPT1 or COM1, a printed listing of test batteries can be obtained by displaying your output on the screen using option 1 and the PRINT SCREEN key to print the list one screen at a time.

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Options 4, 5, and 6 from the Test Batteries Display Menu allow you to display or print the contents of a specific test battery. When you select one of these options, you will be asked for the name of the test battery that you want to display or print. Type the eight-character battery name and press ENTER. To exit without displaying or printing a test battery, press ENTER only when the battery name is requested. See the instructions above if you do not know whether your printer is configured as LPT1 or COM1.

Figure 15
A Sample Display of Available Test Batteries

```
Test        Date
Battery     Created   Battery Description
-------------------------------------------------------------------------
AutoMech    07-17-92  Auto mechanic basic math skills
Battery1    05-16-92  Add, Subtract, Multiply.  Basic office skills
Battery2    05-19-92  Draftsperson: Div. fracs. dec., algebra.
Bookkeep      .         .
Carpentr      .         .
ClerkTyp      .         .
Plumber       .         .



                        *** TEST BATTERY ADMINISTRATION ***


                Press the Enter (<----) Key to list more batteries,
                Press the Space Bar & then Enter (<----) to exit,

                OR TYPE THE NAME OF THE TEST BATTERY THAT YOU WANT
                TO PRINT: ********  THEN PRESS ENTER (<----).
```


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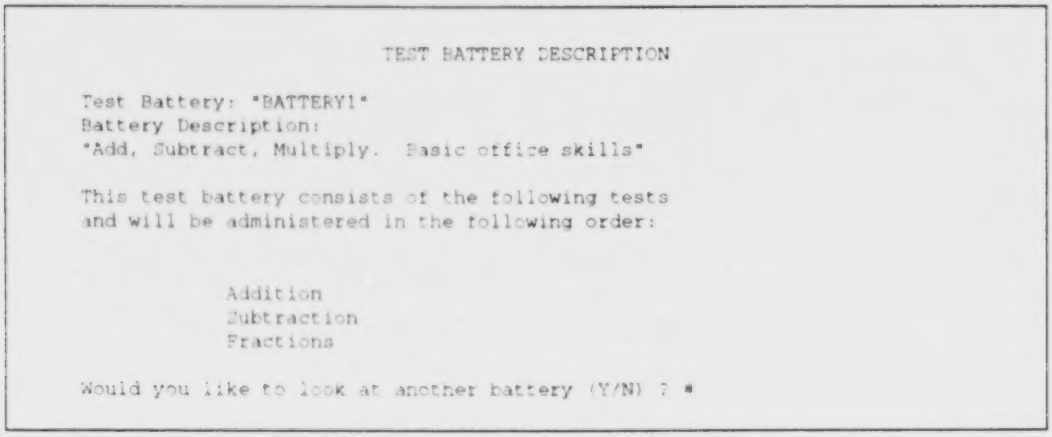
Figure 16 shows a sample display/printout of a test battery.

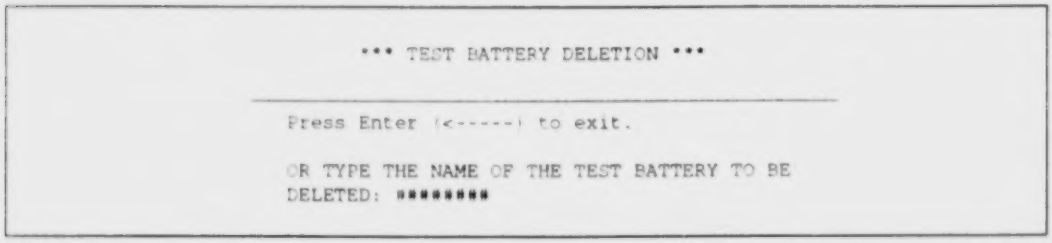
Figure 16
Display of a Sample Test Battery


TEST BATTERY DESCRIPTION
Test Battery: "BATTERY1"
Battery Description:
"Add, Subtract, Multiply. Basic office skills"
This test battery consists of the following tests
and will be administered in the following order:
Addition
Subtraction
Fractions
Would you like to look at another battery (Y/N) ? *

Deleting a Test Battery

Option 5 on the Main Menu allows you to delete (or erase) a test battery. Selection of option 5 results in the screen shown in Figure 17.

Figure 17
The First Test Battery Deletion Screen



In response to the screen in Figure 17, type the name of the test battery you want to delete then press ENTER. (To exit without deleting a test battery, press ENTER only.) After an existing test battery name is entered, the screen shown in Figure 18 will appear.

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Figure 18

The Second Test Battery Deletion Screen

```
                    TEST BATTERY DELETION

Battery Description:
"Add, Subtract, Multiply.  Basic office skills"

The test battery "BATTERY1" consists of the following tests:

Addition
Subtraction
Multiplication

This test battery will no longer exist if you delete it.
Is it OK to delete this test battery (Y/N) ?
```

To be sure that you have typed the correct name of the test battery that you want to delete, the test battery description and the contents of the test battery are displayed. You are then given a final opportunity to decide if you want to delete the test battery. Only a Y (for "yes") answer to the question at the bottom of the screen will delete the test battery.

Modifying a Test Battery

No provision is made in the system for changing the contents of a test battery. This is because the process of creating a new test battery takes only a minute or two. To modify a test battery, simply delete the existing battery that you no longer want to use and create a new battery with the same or a different name.

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REFERENCES

Pucel, D. J., Davis-Feickert, J., & Lewis, M. (1992). *Performance-Based Occupational Math Requirements Assessment (OMRA): Implementation and supporting research* (MDS-143). Berkeley: National Center for Research in Vocational Education, University of California at Berkeley.

Weiss, D. J., Cassuto, N. Y., & Trombley, R. J. (1992). *Assessing mastery in basic mathematics for vocational-technical school students: Development of the Basic Math Mastery Tests* (MDS-490). Berkeley: National Center for Research in Vocational Education, University of California at Berkeley.

Appendix
FILES CREATED AND USED BY THE SYSTEM

Files Created by the System

The system creates two kinds of files during its normal operation. These are files with .BAT and .TXT extensions.

.BAT Files

When a test battery is created, the contents of the test battery are saved in a file with a .BAT extension. For example, if you create a test battery called BATTERY1, it will be stored in and executed from a file named BATTERY1.BAT. It is therefore very important that no other batch files of any kind (i.e., files that have the extension .BAT) be added to the \BM\OP program subdirectory.

.TXT Files

Student test reports are saved in files with a .TXT extension. One file is created for each saved student test report. For example, if you save a student test report file with the name STUDENT1, its complete file name will be STUDENT1.TXT. The files are saved as formatted text files (ASCII files) in the format in which they are displayed and printed.

Because these .TXT files are formatted as text files, they can be reformatted in any word processor if you desire. To avoid changing the original file, before you edit a file in a word processor, you should copy it to a file with a new name and edit the copy of the file. For example, when you are in the \BM\OP directory, DOS command COPY STUDENT1.TXT STUDENT1.DOC will make a duplicate of the STUDENT1.TXT file and name it STUDENT1.DOC. The STUDENT1.DOC file should then be edited in your word processor. Alternatively, you can copy the .TXT file to another directory, change directories, and edit the copy in that directory. Files that have been modified by a word processing program will not display or print correctly using the BMMT system.

Each student report file that you save will use space on your hard disk. If you want to move all the .TXT files from your hard disk to a diskette for off-line storage, the command COPY *.TXT A: will copy all student report files to drive A:. You can then delete the copied files with the command DEL *.TXT. Be sure that you do not accidentally delete any other files in the \BM\OP directory.

Files Used by the System

The BMMT uses two types of files for program execution. These include Pascal executable files and files from the MicroCAT™ Testing System. These files are listed below as a reference in the event the system fails to execute properly. If the system should fail to operate properly, you will need to reinstall it using the original installation diskettes. Because you will be installing the program for the second time, the installatin program will ask you if you want to overwrite certain files that already exist from the first installation. Each time you are asked, indicate "yes," you want to overwrite the files.

Pascal Files

DPRMENU.EXE
DTBMENU.EXE
PRINCBAT.EXE
PRINTBAT.EXE
PRINTDIR.EXE
PRNDIRC1.EXE
REPORTPC.EXE
REPORTPR.EXE
REPORTSE.EXE
SCOREPRN.EXE
SCORLOOK.EXE
SCORMENU.EXE
SCORPRNC.EXE
SCORSAVE.EXE
SEEDIR.FXE
SHOWBAT.EXE
SMASH.EXE
TESTMENU.EXE
CRATBATR.EXE
ADMIN.EXE

MicroCAT™ Files

INTERP.EXE
MAATESTZ.COB
MAATESTZ.SRC
MAATESTZ.ITS
MABTESTZ.SRC
MABTESTZ.ITS
MABTESTZ.COB
MACTESTZ.COB
MACTESTZ.SRC
MACTESTZ.ITS
MADTESTZ.SRC
MADTESTZ.COB
MADTESTZ.ITS
MAETESTZ.ITS
MAETESTZ.SRC
MAETESTZ.COB
DEFAULT.ITS
MAFTESTZ.COB
MAFTESTZ.ITS
MAFTESTZ.SRC
MAGTESTZ.SRC
MAGTESTZ.ITS
MAGTESTZ.COB
MAHTESTZ.COB
MAHTESTZ.SRC
MAHTESTZ.ITS
MAITESTZ.ITS
MAITESTZ.COB
MAITESTZ.SRC
MAJTESTZ.COB
MAJTESTZ.SRC
MAJTESTZ.ITS
DEFAULT.COB
DEFAULT.SRC